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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,183	12/01/2003	Matthew W. McAdam	DATUMTE.017A	2038
20995 7590 04/12/2007 KNOBBE MARTENS OLSON & BEAR LLP 2040 MAIN STREET FOURTEENTH FLOOR IRVINE, CA 92614			EXAMINER MAI, TAN V	
			ART UNIT	PAPER NUMBER
			2193	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	04/12/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 04/12/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com
eOAPilot@kmob.com

Office Action Summary

Application No.

10/725,183

Applicant(s)

MCADAM ET AL.

Examiner

Tan V. Mai

Art Unit

2193

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/7/04.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/1/03</u> . | 6) <input type="checkbox"/> Other: _____ |

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1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 31-38 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claims recite a method for performing a mathematical function.

"[t]o satisfy section 101 requirements, the claim must be for a practical application of the Sec. 101 judicial exception, which can be identified in various ways:

- . The claimed invention "transforms" an article or physical object to a different state or thing.
- . The claimed invention otherwise produces a useful, concrete and tangible result,...".

See "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" OG Date: 22 November 2005.

Since there is no physical transform to establish a practical application, a useful, concrete and tangible result appears to be lacking. Therefore, claims 31-38 are directed to a non-statutory process.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rault in view of Smee et al.

As per independent claim 1, Smee et al. disclose, e.g., see Fig. 4A, the invention substantially as claimed, including a coefficient adjustment element (420a). It is noted

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that the actual claimed "controller" is not explicitly shown in the Figure; however, such controller is implicitly disclosed from the Figure and the corresponding recitation. Also, Smee et al detail their invention in the specification, e.g., see paragraphs [0054], [0067] and [0072].

[0054] A coefficient adjustment element 420 a receives the symbol estimates $y_{\text{sub}.1}(n)$ through $y_{\text{sub}.K}(n)$, the output symbol estimates $y(n)$, the sliced symbol estimates $[\text{tilde over } (y)](n)$, the actual (expected) symbols $y(n)$, or a combination thereof. Coefficient adjustment element 420a then adapts (i.e., trains or adjusts) the coefficients for filters 410a through 410k and the scaling factors for multipliers 412a through 412k based on the received symbol estimates and symbols. **Coefficient adjustment element 420a can be designed to implement the Least Mean Square (LMS) algorithm, the Recursive Least Square (RLS) algorithm, the direct matrix inversion (DMI) algorithm, some other algorithm, or a combination thereof.** Coefficient adjustment element 420a and the adaptation algorithms are described in further detail below.

[0067] As noted above, various adaptation algorithms can be used to generate the new coefficients, some of which are described below.

[0072] Once filters 410a through 410k are individually adapted in the manner described above, the space-domain adaptation can be performed to adapt the scaling factors. The space-domain adaptation can be achieved in a manner similar to that described above for the time-domain adaptation. Specifically, the coefficients of filters 410a through 410k are fixed, and the scaling factors $s_{\text{sub}.1}(n)$ through $s_{\text{sub}.K}(n)$ are adjusted.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to design the claimed invention according to Smee et al's teachings because the proposed device is a an equalizer capable of providing a **selected specific coefficient adaptation algorithms** as claimed.

As per dependent claims 2-4~~6~~7, Smee et al show the claimed feature, e.g., see paragraphs [0064] and [0072].

As per dependent claims 5-7, Smee et al show the claimed feature, e.g., see paragraph [0064].

As per dependent claims 8-16, the detail features are obvious to a person having ordinary skill in the art.

Due to the similarity of claims 17-48 to claims 1-16, they are rejected under a similar rationale.

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Cited references are art of interest.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan V. Mai whose telephone number is (571) 272-3726. The examiner can normally be reached on Mon-Wed and Fri. from 9:30am to 2:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An, can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is:

Official (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2100.



Tan V. Mai
Primary Examiner